

4
823

16

C. J. R. HART.

LIFE AND WORKS OF

SIR ARCHIBALD
GARROD.

For The Wellcome Library

C.A. Mait Sept. 1949.

THE LIFE AND WORKS OF SIR ARCHIBALD GARROD

By C. J. R. HART

Based on the Wix Prize Essay, 1949

PROLOGUE

ARCHIBALD EDWARD GARROD was born in Harley Street on the 25th of November, 1857. If there was anything momentous or spectacular about the event, no record of it has come down to us. Indeed, on this as on other details of their personal affairs, the family retained a reticence which is at once the admiration and the misfortune of the would-be biographer.

Proud, talented and successful, the Garrods came from East Anglia, where they owned a thriving estate agency in the county town of Ipswich. The move to London was made by Archibald's father, Alfred Baring Garrod, who had shown no inclination for the family business. Choosing instead the profession of medicine, he served the usual apprenticeship to a local surgeon and completed his studies at University College, London, where he gained the gold medal at the M.B. examination in 1842.

Soon afterwards he married into the Sparrow family, who were well known in Ipswich, having inhabited for centuries a house in the Butter Market there, one of the most beautiful surviving specimens of Tudor domestic architecture. Dr. Garrod was appointed to the staff of his teaching hospital, and the couple set up house at No. 9 Charterhouse Square, a pleasant Regency building on the site now occupied by a large modern block of flats. He was fortunate, as well as clever. His hospital was newly founded, and the Governors sought to fill the teaching posts with the most promising of the pupils. Less than ten years after qualification Dr. Garrod became a physician and Professor of Therapeutics and Clinical Medicine there — an unusual achievement, even in those times of opportunity. His private practice, too, was growing rapidly, and before long the family was established in Harley Street, and augmented by the arrival of two sons and two daughters.

By the time Archibald appeared on the scene, his brothers were already demonstrating their talent at a preparatory school in Regents Park. What little is known of the family group suggests that it was a happy and united one, yet ambitious almost to

the point of competition among its members. Clearly, great things were expected of Archibald Garrod.

EARLY INFLUENCES

In his early years Archibald was able to watch his brothers as they made their way steadily to success. For three years running, his eldest brother Alfred obtained the medical scholarship at King's College, London, after which he qualified and gained an exhibition at St. John's, Cambridge. The following year found him performing experiments on body temperature, and suggesting improvements to the sphygmograph. In the same year, 1869, Herbert Baring Garrod, the second son of the family, gained the Newdigate Prize for English Essay at Oxford. Subsequently he became a barrister and a noted literary critic.

All this had happened before Archibald was old enough to go to school; and no doubt the boy was too concerned with exploring his immediate environs to pay much attention to such triumphs. Harley Street in the 'sixties, with all its coaches and liverymen, was not so very far from the fields of Marylebone, and if young Garrod's later travels are anything to go by, he did not neglect his early opportunities.

At home a constant visitor was his cousin Charles Keene, whose charming black-and-white sketches in "Punch" were delighting an ever-increasing public. Keene was far more than a mere illustrator; indeed his latest biographer has called him "one of the greatest of English artists." Another gifted cousin was Meredith White Townshend, authority on Indian affairs, who was on the staff of *The Spectator*. He came to live near the Garrods in Harley Street, and it was probably from Townshend that Archibald derived his life-long interest in history and geography. There were other influences, too, outside London. The family always kept a close connection with the Ipswich branch, and one of his grandmother's letters refers to a visit from "dear little Archie."

It seems probable that Garrod's first instruction, like that of his brothers, was obtained at a preparatory school. The

rising family fortunes then rendered a public school education possible, and Professor Garrod chose Marlborough, where Archibald entered Littlefield House in January, 1873, at the age of fifteen.

Whether the success of the rest of the family had overawed him, or whether he was just going through a difficult period, we do not know, but he did not show much bent for the ordinary classical education, and his reports were disappointing. Within two years, his father considered him so unpromising that he decided to remove him from Marlborough and put him to business. By great good fortune this crisis was dealt with by Dr. Farrar, later Dean of Canterbury, who was Master of the College. Farrar could not possibly have followed the progress of all his pupils in any detail—Marlborough was by then among the largest of the public schools—but there must have been something exceptional about Garrod, which the Head was quick to discern. He considered the boy to show promise in a scientific direction, and persuaded his father to revoke his decision.

Garrod always claimed he owed his career to Farrar's judgment, and there is no doubt that the following passage from his address to the Osler Club, more than fifty years later, is autobiographical:—

"We recall the schoolmaster who awakened our interest in what has been our life's work; he who by a word of encouragement spoken in good season helped to give us confidence and showed that one person at least believed that there was something in us. Another may have succeeded in interesting us in subjects for which we had no appetite—classics perhaps . . . "

Garrod determined to justify the faith his Head had placed in his ability. He studied hard in all subjects, but particularly the sciences, and when some months later he entered for the Public Schools Examination of the Royal Geographical Society, he gained the Bronze Medal for second place. The success was a timely one, and did much to restore his self-confidence and to meet the high expectations of his father. As he continued to work hard and show considerable promise, in January, 1877, he was entered at Oxford as a Commoner at Christ Church.

Of the events of the next four years, not much is known, except that he read very widely, and developed an affection for the

quiet and orderly collegiate routine. His solemn and retiring disposition masked a keen brain and a determined ambition to emulate the success of the rest of the family.

His eldest brother had become Prosector of the Zoological Society when only 25, and while still in his twenties he obtained the posts of Professor of Comparative Anatomy at King's, and Fullerian Professor of Physiology at the Royal Institution. This progress was halted abruptly by a severe pulmonary haemorrhage, and in mid-December, 1878, Archibald accompanied him to Mentone, where he stayed until the end of January. The season was wet and dull there, and the change did him little good. His health deteriorated steadily until his death in October 1879, surrounded by his family, and mourned by many scientific friends, who had seen in him a second Darwin.

Meanwhile Archibald had returned to Oxford, where he was awarded the Johnson Memorial Prize for an essay on *The Nebulæ; a Fragment of Astronomical History* in which he discussed Sir William Herschel's observations on nebulae and star-clusters. From this essay may be dated Garrod's lively interest in what he termed "the very borderland of knowledge." New discoveries in all branches of science called forth his unstinted admiration.

When the time came for a decision on his future line of work, Garrod could not have found it easy. His wide interests and natural bent for investigation suggested a research post, but financial considerations forced the choice of a more remunerative career. His father had reached consultant status some years previously, and was devoting much of his time to work on the causes and treatment of gout. Chemical pathology was then one of those untrodden pathways which enticed the adventurous spirit, and Archibald Garrod was deeply interested in his father's researches.

In 1880, having obtained a first in the Natural Sciences School, Garrod entered Bart's. What determined the choice of hospital is not easy to tell, but among the students were several known to him at Oxford; as for the staff, his father had many friends there. The physicians included Drs. Church and Gee, with Dr. Duckworth as one of the assistants. Among the surgeons was Mr. Thomas Smith, Mr. Mills was the Administrator of Chloroform, and

the (for Garrod) all-important subject of Chemistry was under the charge of Dr. Russell, F.R.S., whose predecessor had committed *felo-de-se* with the curious mixture of morphia and prussic acid. Incidentally, the standard text book of *Materia Medica* then in use at Bart.'s was written by Garrod's father.

While a clinical student, Garrod continued his interests in other branches of science. He rewrote his prize essay on Astronomy, and had it printed privately—his earliest work. This 44-page pamphlet is now rare, but a copy has found its way to the British Museum. In spite of this preoccupation, medicine was not neglected; in 1881 he gained a Junior Scholarship and in 1883 the Brackenbury Scholarship in Medicine. He celebrated the latter award with a trip to Norway the following summer, which he made with a fellow student, H. Lewis Jones. Part of their holiday was devoted to a survey of Norwegian medicine, and on his return Garrod described some of their experiences in a paper entitled "A Visit to the Leper Hospital in Bergen," which he read before the Abernethian Society. It comes as something of a shock to the modern student to discover that the leper population of Norway was then 1,600.

Garrod qualified M.R.C.S. in 1884, and on his father's advice spent some months post-graduate study at the Allgemeines Krankenhaus in Vienna, where there was excellent teaching, especially in the more technical branches of medicine. The lecture-demonstrations by Schnitzler and von Schrötter on laryngology—then a very poorly developed science in England—excited his especial admiration, and on his return he produced a concise and useful little book on the laryngoscope. Nor was this the only result of his stay abroad, for in after life Garrod found his foreign friendships of great help in propagating his discoveries. His father was an honorary member of the *Gesellschaft für innere Medizin*, and in later years the son achieved the same distinction.

MEDICINE AND SCIENCE

He came back to Bart.'s as a house physician to Dr. (later Sir) Dyce Duckworth, an old friend of his father, with whom he had much correspondence on the subject of "rheumatics." At this time there was only one house physician to each firm, and for a

whole year Garrod was responsible for the work in the surgery as well as the wards. It would be hard to suggest a better preparation for his professional career than the rigorous training at home and abroad to which Garrod submitted himself.

In 1885 he obtained his B.M., M.A., Oxford and M.R.C.P., London. He proceeded M.D. a year later. He was now 29, and the question of a home and practice weighed heavily. Thomas Smith was at this time at the height of his career at Bart.'s. An exponent of the old school—he was the last man to enter Bart.'s as an apprentice, under Paget—he was the best-loved surgeon in London, with a large and remunerative practice. Two of his daughters were already the wives of Bart.'s men, and in 1886 Archibald Garrod married his eldest daughter, Laura Elizabeth. The details of the romance, in common with the rest of their private lives, are hidden from our gaze.

Dr. and Mrs. Garrod settled at No. 9 Chandos Street, Cavendish Square, where they remained for the next 30 years. Together with his friend H. L. Jones, Garrod was appointed a Casualty Physician at Bart.'s. Ten years previously Robert Bridges had held this post, and the conditions in the casualty department had formed the subject of a powerful attack from his pen, which was printed in the Hospital Reports. By the time Garrod reached the scene, Bridges was on his way to becoming Poet Laureate, but the department was little changed, and remained so until the present building was erected in 1907.

After holding this appointment for two years, Garrod became Assistant Physician to the West London Hospital, where he stayed until 1896. Dr. Garrod desired a permanent post at Bart.'s, but none was then available. In those days, to quote Robert Bridges, "the only avenue to the staff was through the post-mortem room." It was possibly with this remark in mind—taken literally—that Garrod proceeded to spend part of his spare time collaborating with Wilmot Herringham and W. J. Gow to prepare *A handbook of Medical Pathology for the use of students in the Museum of St. Bartholomew's Hospital*, which was published in 1894.

During his long years of waiting for a vacancy at St. Bartholomew's, he started his life work on chemical problems. His early observations were made under the influence of his father (now knighted and a physician-

extraordinary to Queen Victoria), who placed case books at his disposal. In 1890 Archibald Garrod produced a *Treatise on Rheumatism and Rheumatoid Arthritis*. His father had previously differentiated the latter condition from gout; in later years Garrod drew a further distinction by classifying osteoarthritis separately. Throughout his life he wrote many papers on this and allied subjects, in one of which he described the rheumatic nodules known as "Garrod's Pads."

At this period the technical methods of quantitative blood analysis were yet to be developed and those interested in metabolism were still led to look for changes in the urine as a chief field for study. Garrod began to concentrate on urinary pigments, and his first paper on hæmatoporphyrin was produced in collaboration with F. Gowland Hopkins of Guy's.

Eventually a place was found within the hospital hierarchy. In 1895 the number of medical firms was increased from four to five, and this led to a rearrangement of posts. The Medical Registrarship was combined with the Department of Morbid Anatomy, and Drs. Garrod and Calvert were made the two first holders of this office. Before long he became also Physician to Out-patients at Great Ormond Street, where his father-in-law (now a baronet and surgeon-extraordinary to Queen Victoria) had been a surgeon for many years.

The Hospital for Sick Children is now nearing its centenary, and it is fitting to pause here a moment to survey the part played by Bart.'s men in its early history. Commencing with the founder, Dr. Charles West, the roll continues with such names as Samuel Gee, Francis Harris, William Steavenson and Robert Bridges. At the turn of the century, Sir Thomas Smith and his son-in-law, Dr. Archibald Garrod, were maintaining this proud connection.

Always an extremely hard worker, Garrod was now completely absorbed in his studies. His interest in urinary pigments led him to investigate Alkaptonuria, the peculiar condition in which voided urine turns black on standing. It was then thought to be due to infection, but the absence of other signs of disease rendered this explanation unlikely. One afternoon while walking home from hospital and pondering on this problem, it flashed through Garrod's mind that the condition was perhaps caused by a metabolic error, a disturbance of chemical activity in

which a different molecule resulted as an end-product. He saw that the origin of such a state of affairs could be hereditary. Fortunately the mother of one of his alkaptonuric patients was pregnant at the time, and Garrod resolved to test his theory.

The experiment, once conceived, was simple enough. The newly born baby's napkins were inspected regularly. They were found to be stained by the second day of life. Collection of urine was carried out as soon as practicable, and within a week the characteristic pigment of the condition—homogentisic acid—was isolated. The child had been born alkaptonuric.

The discovery was of far-reaching significance, for until that moment the possibility of such inherited abnormalities had not been examined. Garrod spent the remainder of his life collecting further examples of such inborn errors of metabolism. Meanwhile his work began to attract real, if limited, attention in this country. He became a full physician at Great Ormond Street, and in the first year of the new century he was invited to summarise his researches in the Bradshaw Lectures of the Royal College of Physicians.

In 1903 Dr. Archibald Garrod became an Assistant Physician at St. Bartholomew's Hospital. He was then aged forty-six; owing to the galaxy of medical talent then on the staff—most of whom had reached their posts at an earlier age—Garrod had waited longer than usual for this appointment. Little known as yet at home, he was already famous abroad, and the many foreign physicians and scientists of eminence who came to visit him during his early period on the staff gained him some notoriety.

When in the following year it was decided to start an out-patient department for the diseases of children, Garrod's experience made him particularly suited for the post of physician-in-charge, which he shared with Dr. Herbert Morley Fletcher. Together they built up a department which was handling 7,000 patients a year when Garrod left it for other activities six years later.

This period was probably the happiest of Garrod's life. His work was receiving at last due recognition, and at home his wife and four children formed a charming family circle. The veil over his private affairs is lifted for a rare moment in a description by one of his children many years later:—

"His interest in astronomy, like that in history, always remained with him. Both

these interests he imparted to his children at an early age, having a great gift for making such things interesting to the young. When I was a child, from nine years old onward, one of the great pleasures of the week was the Saturday afternoon walk, which was always the occasion for a long story, usually historical. In this way I learned the history of the Indian Mutiny, and the chronicles of the Roman Emperors, which were developed in front of their busts in the British Museum, and a host of other things. If possible my father planned the walk to take in some building or statue relating to the story he told."

The account may cause modern readers to smile, but with all its stateliness and grave dignity there is something very human in this picture of the successful Edwardian physician and his children. All too quickly, however, the glimpse of the "life" is ended, and regrettably we turn once more to catalogue the "works."

In 1904 A. E. Garrod was an important participant in a move to start a medical journal of a type rather different from any then being published in England. The aim was to produce a medium for recording the results of fundamental research which had perhaps no immediate clinical application. At an early stage in the discussions the inimitable Osler was consulted by Garrod. He suggested the prior formation of an "Association of Physicians" modelled upon the American body of the same title which he had formed, and using the proposed journal as its official organ.

Osler had just accepted the Regius Chair of Medicine at Oxford, and was soon back in America settling his affairs before his final move across the Atlantic. Meanwhile Garrod was deputed to get together a few active and influential physicians, and arrange a meeting with Osler as soon as he returned to England. Garrod and Osler had been in correspondence a year or two previously on the subject of alkaptonuria, and their acquaintance now ripened into friendship.

In May, 1906, the meeting took place at Dr. Wilmot Herringham's house in Wimpole Street, where after dinner Herringham, Rolleston, Garrod (all of Bart.'s), Hutchison, Hale-White, Rose Bradford and Osler agreed to accept the latter's suggestions. This involved much activity and canvassing up and down the country by those present at

the gathering, who soon became known by their followers as "The Gang." When in due course the highly select association was formed—numbers restricted to 250—most of the members of "The Gang" became co-editors of the journal. Garrod retained his post on the Quarterly Journal of Medicine for 21 years, and devoted much time to his editorial duties.

Partly because of these activities, his researches began to receive more attention in England than they had done previously. In 1908 he was invited to give the Croonian lectures to the Royal College of Physicians. He devoted them to an account of the inborn errors of metabolism, which he published in book form a year later—his most important single work. By then he had added three more diseases to his list, and was able to generalise on the subject. A whole branch of medical knowledge had been created. In recognition of this achievement, he was elected a Fellow of the Royal Society, an honour already bestowed upon his father and elder brother. Garrod was justly proud of this remarkable family record.

Dr. R. S. Frew, who was associated with Garrod at Great Ormond Street from 1908 to 1911, has kindly supplied some details of his work there. He writes:—

"He was the greatest scientific physician I encountered during my whole career, with a great gift for imparting his knowledge. His round lasted for about $1\frac{1}{2}$ hours, twice weekly, and half that time was occupied in testing urines. He said to me once, 'Clinical medicine is not really my main interest, I am a wanderer down the by-paths of medicine'—an accurate description.

"He used to love bringing his alkaptonuric patients back time and again to the ward, and a case of steatorrhœa was heaven to him. He had both a male and a female alkaptonuric and he used to get them into the ward at the same time, in the hope, as he said, that they might become fond of each other, for there was no known case of two alkaptonurics having married each other!"

"He would hold forth on Mendelism and illustrate it on many occasions. He loved children, but was, I think, always a little in awe of them. He was a most distinguished man, a great pioneer, though equally a great upholder of tradition."

Sir Robert Hutchison, another of his Great Ormond Street colleagues, and a member of

"The Gang," writes similarly of this period:—

"He was not one about whom anecdotes catered for ; he was in truth rather solemn—one might say ponderous—without much wit or humour. He therefore did not appeal much to students for he had none of the tricks and mannerisms which they like ; he was, however, a sound teacher and a good all-round paediatrician."

In November, 1911, Garrod was elected Fellow of the centuries-old College Club of the R.C.P., whose select gatherings he found most congenial, and attended regularly until the war. Of the 22 members, those from Bart.'s then included Sir William Church, Sir Norman Moore and Sir Francis Champneys, to mention only the baronets.

In 1912 he delivered the Lettsomian Lectures to the Medical Society of London. In 1857—the year of Garrod's birth—his father had been similarly honoured. Both chose chemical subjects—the father gout, the son glycosuria. The strong similarity between their careers will have been noticed already. In one direction there was a difference, however, for Dr. Garrod never attracted as many private patients as his father, who had enjoyed one of the largest practices in London.

Earlier in 1912 Dr. Garrod had been appointed at last a Physician at St. Bartholomew's. His inaugural lecture to the Abernethian Society was entitled "The Scientific Spirit in Medicine," and he made a plea that more attention should be paid to German medical literature.

Two passages from later accounts of Garrod, written by his friends among the staff, give a somewhat forbidding picture of the newly appointed fifty-six-year-old physician:—

"In his prime of life," says Dr. Hugh Thursfield, "he was of markedly handsome appearance, with finely shaped head and face, from which looked out dark eyes of impressive brilliance, which at first sight seemed to promise quickness, vivacity and, perhaps, irascibility, yet with deeper knowledge it became clear that any such supposition was completely incorrect.

"Of irascibility there was never a trace ; even by momentary irritation he was but rarely overtaken, and never possessed but for a second or two ; and quickness of wit, which he had in plenty, was always subdued to a somewhat slow and deliberate utterance, the outcome, no doubt, of his lifelong habit of conscious self-criticism."

Sir Francis Fraser gives a similar description:—

"... There was no one quite like him. An able, practical physician when the need arose, patients, as he said himself, did not really interest him, and the complex problem presented by an individual who is ill did not really appeal to him for solution.

"... His was the mind of the true scientist, and one often wondered, and he wondered also, how he had come to be a practising physician. . . . Often he would spend all morning at a window in the ward testing urine that presented an unusual colour or smell. The morning's round could be left to others. . . .

"Each group of students was to him the raw material in which he hoped to find an individual who would be inspired to see a 'higher medicine' in the problems of the ward, who would perhaps be tempted to ignore the immediately practical and devote his life to 'things that matter'."

Early in 1914 Dr. Garrod was called to give evidence before the Haldane Commission on University Education in London. His recommendations for closer association between the hospital and the university were put into effect after the war, as will be seen presently. At the end of July the B.M.A. held its 82nd Annual General Meeting, in Aberdeen. While present at the gathering, Dr. Garrod received the hon. L.L.D. of Aberdeen University, the first recognition of his work to come from a seat of learning. On August 1st he delivered the Address in Medicine to the Association. It offered no hint of the storm which was to break upon the world just three days later. Indeed, the whole atmosphere of the conference was one of great calm and detachment. No doubt, like the rest of their generation, they assumed "it would all be over in six months." [To be concluded]

CANDID CAMERA

*This volume of Informal Studies of the Great may be obtained from the Librarian,
price 1s.*

It is only after he has acquired this knowledge that he is in a position to apply a specialised form of Homœo-therapeutics.

The Faculty of Homœopathy was established to maintain a standard of *post-graduate* education in Homœopathy, and its diplomas of Membership (M.F.Hom.) and Fellowship (F.F.Hom.) are available only to qualified medical graduates, registered by the General Medical Council of this country.

Its object is, not to replace, but to advance the standard medical curriculum. Homœopathy has a place in the Art and Science of General Medicine.

On behalf of the Faculty, I invite any final year students or graduates in Medicine, who are interested, to attend the scientific sessions which are held on the first Thursday, at 5 p.m., of each month from October to June, at the Royal London Homœopathic Hospital, Great Ormond Street, London, W.C.1.

THE DUTY CLERK



"A summer's day will seem an hour but short,
Being wasted in such time-beguiling sport."
(*Venus and Adonis*)

THE LIFE AND WORKS OF SIR ARCHIBALD GARROD

Part II

By C. J. R. HART

WAR AND POST-WAR

War found him with an established reputation and a grown-up family. He was gazetted to the 1st London General Hospital (T.F.) at Camberwell, and so spent the first part of the conflict in England. Of his three sons, the eldest, Alfred Noël, had just qualified at Bart.'s and became a houseman there. Basil, the youngest, entered Sandhurst on leaving Marlborough. The second son, Thomas, was commissioned in the 6th Batt. London Regt. Dr. Garrod's daughter was then still at school. So for the time being, all but one were safe.

They were not granted many months immunity. The first blow fell on May 10th, 1915, when 2/Lieut. T. A. Garrod was killed in action in France. To the family's deep bereavement was added anxiety for the remaining members. Dr. Alfred Garrod was commissioned in the R.A.M.C. that July. He went to France later in the year, just before his brother passed out at Sandhurst.

Meanwhile, Dr. Archibald Garrod began to concern himself with cases of typhoid and paratyphoid, then rampant in the East among uninoculated troops, some of whom were brought back to England for treatment. Osler comes into the picture once again, for he arranged an important series of meetings at the Royal Society of Medicine to discuss all aspects of 'P.U.O.'—pyrexia of unknown origin, then so readily diagnosed to cover such diseases as trench fever, infective hepatitis, and paratyphoid fever. He notes: "21st Oct. I saw Garrod today. Failing Dawson I will open but D. is the man and he should be asked. It is a most urgent problem. I will ask tomorrow at the Army Med. College for any man who knows Para-Typ."

Garrod's activity in this field resulted in his promotion to Acting Colonel, A.M.S., and appointment as a consulting physician to the Mediterranean Forces. He was based on Malta, where he saw patients evacuated from Gallipoli and later from Salonika. "This," said Dr. Graham, "called forth all his great powers, for he had to treat patients suffering from tropical diseases which he had never seen previously, but his powers of observation and research enabled him to cope successfully with these problems, and to give valuable service."

He formed a close friendship with the archaeologist Professor Zammit, who was then curator of the Valletta Museum, and who was excavating the Neolithic temples of the island. Whenever he could spare the time he accompanied Zammit on these expeditions, and became very knowledgeable on Maltese pre-history.

Some such occupation was very necessary for him, to take his mind off the tragedy which war had brought to his family. In January, 1916, his eldest son, the only one to follow his father into the profession, was killed in action at Givenchy, near Bethune, when a shell exploded while he was working with an ambulance. He had been in France only two months.

At this period of adversity Garrod concentrated on his clinical work as never before. His object was not to seek recognition—rather the reverse; nevertheless official notice was taken of his efforts. In 1916 he was mentioned in despatches and created C.M.G. Two years later he was appointed a Knight Commander of this Order, for his devoted service.

He was made an hon. M.D. of Malta University in 1916, and during his stay on the island he was closely associated with the staff there. His researches with Zammit, together with his unusual knowledge of history and geography, were drawn upon in a charming lecture on *Islands* delivered at the University in January, 1919, and afterwards published. In the fine peroration he prophesied the destiny of Malta with remarkable insight:—

"The agency which promises to be most destructive to insular seclusion is only emerging from its infancy. Malta has been a halting-place for flocks of migrant birds, northward and southward bound; so we may expect that in the future it will become a place of call for squadrons of aircraft making the same traverse. But even when the sea-girt fortress shall no longer afford protection, nor insular retreat seclusion, there will remain the fascination of the far-spread sea, the island's beauty and the island's charm."

A month afterwards, fate dealt its final blow. His last remaining son, who had survived three years of war, was carried off in the great influenza pandemic which scoured

Europe in its first few months of peace. Garrod was heartbroken. His daughter travelled out from England to be with him, but the shock left permanent effects. All who knew him, speak of the way in which the rest of his life was overshadowed by his triple bereavement.

Later that year, Sir Archibald arrived back at Bart.'s to resume his duties as physician. He was a very different man from five years previously; even more reticent, and very aged—not so much by time, as by events. A fellow-physician called him "the shadow of his former self."

Nevertheless his concern for medical science remained, and he sought to use his increasing influence in fresh fields of endeavour. An important reconstruction committee was sitting at the time, which was drawing up the post-war plan for the hospital and the medical school. They had before them the recommendations made by Garrod and his colleagues to the Haldane Commission. Sir Archibald pressed strongly for the formation of self-contained Professorial Units, with bedside teaching in the British tradition, but having also their own laboratories attached, on the pre-war German model. There were certain research problems, he maintained, which only the clinician could appreciate to the full, and he should have all the necessary facilities for working out his own ideas in his own way. Sir Archibald's views were summarised in a chapter entitled "The Laboratory and the Ward," which he wrote for the two-volume symposium produced that year in honour of Osler's 70th birthday.

When the committee decided that October to go ahead with the scheme, Sir Archibald was the obvious choice for the whole-time Director of the Medical Unit, and so became the first Professor of Medicine at St. Bartholomew's. Although he did not enjoy present-day facilities—the wards built by Gibb in the 1750s were then little changed—nevertheless he was given a free hand to incorporate many of his ideas into the organisation of the unit. The concept of a special set of laboratories proved so successful in practice, that when the units were freshly housed in 1935, the Dunn laboratories were made an integral part of their design.

Meanwhile the end of the decade at Oxford had brought with it the death of Osler. A man of great learning, a unique capacity for work and a most generous and affectionate

nature, he had long held an undoubted position as leader of medical thought on both sides of the Atlantic. The problem of finding a successor to the Regius Chair of Medicine at Oxford was of unusual difficulty. Whoever was chosen would have an unenviable task in following so remarkable a man. In London, the Oxford graduates pressed for Sir Wilmot Heringham, but their solicitations were of no avail. The appointment was in the hands of the Prime Minister, and Mr. Lloyd George chose Sir Archibald Garrod.

So great an honour was not to be refused. In his brief year as Professor at Bart.'s, Sir Archibald had laid excellent foundations, and he was content to leave to younger men the task of building up the new tradition. Bart.'s will not forget his work; a ward on the unit bears his name.

OXFORD AND CAMBRIDGE

Sir Archibald and Lady Garrod moved accordingly to Oxford, where he was elected to a senior studentship at his old college, Christ Church. In his obituary on Osler, Sir Archibald described some of the responsibilities of his new office, of which he was the 22nd holder: "... a Chair dating from the reign of Henry VIII . . . a position of high prestige, which has been enhanced by the tenure of Acland and Saunderson, with great opportunities of influence but little clinical teaching. The duties of the Regius Professor are varied, and others are added to them."

Some of these duties may be detailed. He was *ex officio* a Curator of the Bodleian, and Master of the Almshouses at Ewelme. This latter dignity had been bestowed upon the Chair by James I in 1617, to augment its income. Ewelme is a beautiful little village on the foot of the Chilterns, fourteen miles out from Oxford. The almshouses, which have their own church, are five centuries old, and house thirteen aged pensioners. There are rooms for the Master, which Sir Archibald was fond of occupying for short visits, being as one would expect most interested in his duties in this connection.

He had also his own stall in the Cathedral, with the privilege of reading the lessons, if he so desired. His predecessor had treated this concession very lightly—"These old fools have put me in a surplice and I had to go to chapel, but I wished I had been in the pulpit instead of the Regius Prof. of Divinity—who is a dry old stick"—but Sir Archibald had a very different approach. "He was," says

Dr. Heaton, who knew him there, "always kindly, courteous and gentle, a regular attender at morning service at the Cathedral on Sunday mornings, where he was very fond of reading the Lessons (quite inaudibly), and very proud of his membership of Christ Church."

As Regius Professor he was responsible for the examinations for medical degrees of the University. Another of his appointments was that of Consulting Physician at the Radcliffe Infirmary, where he was allowed five teaching beds. He was also elected a delegate to the Clarendon Press, but probably his most important office was his membership of the Hebdomadal Council, the 21 members of which formed the governing body of the University and met to pursue their deliberations every Monday afternoon.

He found that the administration of the medical faculty gave him opportunities for advancing his plans for "better medicine," in which the scientific approach could be encouraged. The best exposition of his views is contained in the Linacre Lecture which he gave at St. John's, Cambridge, in 1923, entitled "Glimpses of the Higher Medicine."

His interest in metabolic errors was stimulated once more by a case discovered by Dr. Mackey, in which the very first urine passed by a child was red in colour, suggesting that his porphyrinuria, detected on analysis, was congenital in origin. The disease of Hæmatoporphyrina Congenita, in which the clinical picture is the remarkable one of skin eruptions, red urine and pink milk teeth, was added therefore to the list of hereditary anomalies, and included in the 2nd Edition of his *Inborn Errors of Metabolism* which appeared the following year in 1923.

Various other tasks devolved upon Sir Archibald as the years went by. He was made a member of the Statutory Commission set up for the University, where the task of representing the claims of the Science Faculties was one which called for much patient investigation and tact. Two years later he found himself on the Advisory Commission formed by the Home Secretary to report upon the Administration of the Cruelty to Animals Act.

In this year, 1934, he was invited to deliver the Harveian Oration before the Royal College of Physicians. He chose for his subject "The Debt of Science to Medicine." A year later he became the first recipient of the Osler Bronze Medal, given quinquennially

to "the Oxford medical graduate who shall have made the most valuable contribution in the science, art or literature of medicine."

That year he wrote a biography of Alexander Gaspard Marchet for the Guy's Hospital Journal. Marchet was a French emigré who became a physician at Guy's, and in 1822 published *An Account of a Singular Variety of Urine, which turns Black soon after being Discharged*. Until this biography was written, Bœdeker had been credited with the discovery of Alkaptonuria, in 1858. Thus did a member of one great hospital remind another of its forgotten achievements.

In 1927, upon reaching the age of 70, Sir Archibald retired from the Chair at Oxford. He had been very happy there, and was loth to give up his appointment. In the first years of his retirement he lived with his wife at Wilford Lodge, Melton, in Suffolk, a house which they had long possessed, inherited from his Ipswich ancestors. They found, however, that the isolation from his friends and many of his interests was not very satisfactory. At Cambridge their daughter, whose interest in archaeology had first been stimulated by her father during her visit to Malta, now held a Research Fellowship in the subject, and invited them to stay with her.

When they moved there in 1929 they were received with open arms by many friends, and through the good offices of Sir Gowland Hopkins, who held the Chair of Biochemistry, Sir Archibald was elected to dining rights at Trinity College.

"Soon after his move," relates his daughter, "his eyesight began to fail, a deprivation which he felt very keenly, but which was lightened by his wife's devotion. He had always been fond of travel, and during these years went with his wife and daughter on several cruises, a very easy form of travel which he enjoyed very much as he grew older.

"He was always interested in puzzles, such as acrostics, and was therefore predestined to be a solver of cross-words. In his last years the solution of the 'Times' cross-word was a daily family event, and Sir Archibald, who could no longer read, became extremely skilful at solving anagrams in his head."

But Sir Archibald's period of usefulness had not yet come to an end. In 1928 he delivered an Oration to the Royal Society of Medicine, on "The Lessons of the Rare Maladies." In 1930 he published his last

book, *The Inborn Factors in Disease*, based on the Huxley lecture on "Diathesis" which he had given three years previously. In this small volume he made his final *tour de force*, summarising the memories of a lifetime of observation. A convincing exponent of Mendelism since his Great Ormond Street days, he developed to near-perfection his theories on constitutional predisposition to disease.

Honours showered upon him. In 1931 he was elected an hon. F.R.C.P.E.. He was already a Fellow of the Royal Faculty at Glasgow, and hon. L.L.D. of Glasgow University, and an hon. M.D. of Dublin and Padua. Abroad he was made an honorary member of the American Association of Physicians, and of the *Arztlicher Verein*, München. Finally in 1935, at the age of 78, he was awarded the Gold Medal of the Royal Society of Medicine.

He was then considerably invalided with cardiac asthma, but his mind was as alert as ever. In November, 1935, he submitted a postscript to the Quarterly Journal of Medicine, on the subject of Congenital Porphyrinuria. He asked for the paper back for revision, and he was engaged on this task when on March 28th, 1936, he died, very suddenly, of coronary thrombosis, without acute illness. His last paper was published posthumously.

EPILOGUE

When Abernethy pleaded before the Governors of this Hospital for more provisions for the students, he mentioned that their attendance formed "a strong incentive to the medical officers to perform their duties diligently and with skill and conscience, since their conduct is open to the public expression of praise and censure by these vigilant observers." The praise and the censure is still expressed, but it is doubtful if the medical and surgical staff remain as dependent for their practice upon the good offices of their students, as they have been in the past.

There is, however, another tradition arising by which the students are able to give voice effectively to their opinions of their masters. In 1842 the Reverend Samuel Wix gave £200 to found an annual prize for a composition on "the connection between physical science and revealed religion, or on the connection between the studies of ancient and modern literature, and the studies of

medical science." Such a subject was capable of wide interpretation, and generations of students have laboured upon abstruse and learned discourses on various aspects of this theme.

In recent years the founder's wishes have been construed to fit the need for short biographies of the more illustrious alumni of St. Bartholomew's, many of whom would have remained otherwise unhonoured and unsung. So it has come about that the last word upon many of the staff has rested with the students, who "draw their frailties from their dread abode."

Upon Sir Archibald's death, the usual obituaries appeared in the usual journals, and they were followed by a period of silence which might have lasted much longer, had this new tradition not arisen. He might well have become one of that great majority of whom Sir Thomas Browne wrote the immortal epitaph: "But the iniquity of oblivion blindly scattereth her poppy, and deals with the memory of men without distinction to merit of perpetuity... Who knows whether the best of men be known, or whether there be not more remarkable persons forgot than any that stand remembered in the known account of time?"

He was born in the year of the Indian Mutiny and the visit to England of Napoleon III; the year of his demise witnessed the beginning of the Civil War in Spain and Hitler's remilitarisation of the Rhineland. In 1857 many still believed in the spontaneous generation of germs, and anti-septic surgery was unheard of. In 1936 the sulphonamides were well established, and penicillin was on the way. He saw the first cars, the first aeroplanes, and the First World War. In spite of his scientific background, like many of his generation he found it hard to adapt himself to this bewildering world of change.

Viewed from the present day, his lifetime spanned that twilight period for which neither historical record nor personal reminiscence can yet afford an objective description. It has not been easy to reconstruct his life and works year by year, nor has it proved possible to enliven the narrative with those more intimate accounts of thought and environment which the biographical essay demands. He is an extraordinary example of an era in which family life formed that sacred and almost secret existence which was the affair of the family and nobody else.

No truly contemporary description of the man, not a diary, not a single letter even, has been found. One is thrown back upon the obituaries, the printed works, and such odd and obscure relics of his existence as have by chance survived.

He came from a most distinguished line, whose diversity of talent cannot be better demonstrated than by listing the peculiar collection of Garrodia which reposes in the British Museum. Excluding the works of Keene, Townshend and other collaterals, one finds there: a catalogue of an estate sale by his grandfather, his father's medical textbooks, literary essays by one brother and the scientific papers of the other, works on astronomy, geography, history and chemistry by Sir Archibald himself, and accounts of the archaeological discoveries of his daughter.

He was born to a tradition of success early in life, and his own delay in mounting the ladder nearly resulted in drastic action by his father, which would have wrecked his whole career. When eventually he did start climbing, his father's guiding hand was well in evidence.

But it was upon his own abilities that Sir Archibald depended as he built up his contribution to human knowledge. Although the inborn metabolic errors are rare, and practical applications of their knowledge restricted, nevertheless Garrod's researches were on fundamental problems, and did much to point the way to modern concepts of body chemistry. The scholarly little books in which he summarised his discoveries are the best possible demonstration of his modesty and restraint. Many elaborate and expensive monographs since published contain work of lesser quality.

He felt the waiting period for his appointment to the staff at Bart.'s most keenly, and it is recorded that during a visit to the great Virchow, he gave utterance to the complaint that "opportunities are not what they were

in the good old days, when nuggets lay thick on the surface for anyone who kept his eyes open to pick them up, whereas now the gold is only to be reached by skilful mining."

His public and professional life was blameless, to such an extent that one feels that a few of the human frailties would not have come amiss. Though always kind and thoughtful for others, he was not over-popular with the students, and the reason is not far to seek: he had no sense of humour. At Oxford his work for the improvement of medical teaching was as valuable as it was unspectacular. At Bart.'s he will always be remembered with pride as the first Professor of Medicine. Sir Francis Fraser, his successor to this office, has written:—

"He was a scholar in all he said and gentle in all he did, and those who had the privilege of knowing him lived better and worked better because of him."

Who could desire a finer epitaph?

ACKNOWLEDGMENTS

I wish to thank Professor Dorothy Garrod for her kindness in providing many details of her father's life not to be found elsewhere. Mr. John Thornton, A.L.A., has given valuable advice on sources, and Mr. J. G. O'Leary, F.L.A., has also offered many valuable suggestions. In addition, the librarians of the following institutions have all gone to great pains to provide what information they could:—The Bodleian Library, The Royal Geographical Society, Marlborough College, The Royal Society of Medicine, the Royal College of Physicians and the Wellcome Library and Museum. The following friends and colleagues of Sir Archibald have helped with details of their recollections:—Professor K. J. Franklin, Sir Francis Fraser, Dr. Robert Frew, Dr. George Graham, Dr. T. B. Heaton, Sir Robert Hutchison and R. H. Rutherford, Esq.

BIBLIOGRAPHY AND WORKS

A detailed list of the works of Sir Archibald Garrod, including ten books and over one hundred papers, is appended to his obituary in the St. Bart.'s Hospital Reports, written by Dr. George Graham. A few additional papers are listed in the Wix Essay, which has been deposited in the College Library, and readers are referred to this for a bibliography.

ABERNETHIAN SOCIETY

The Annual General Meeting of the 1948-49 session was held on June 15th, when officers were elected for 1949-50. The committee elected was:

Presidents: N. A. Green, S. F. Hazelton.

Vice-Presidents: Miss J. Wheelwright, G. Davies.

Secretaries: K. E. J. Bowers, J. P. Waterhouse.

Pre-Clinical Representatives: Miss R. Hurst, J. Batterham.

The first two meetings of the 1949-50 session have been arranged:—

October 20th Professor Sir James Paterson Ross on "Your Patient and You."

October 27th—Dr. Charles Hill on "Current Events."



